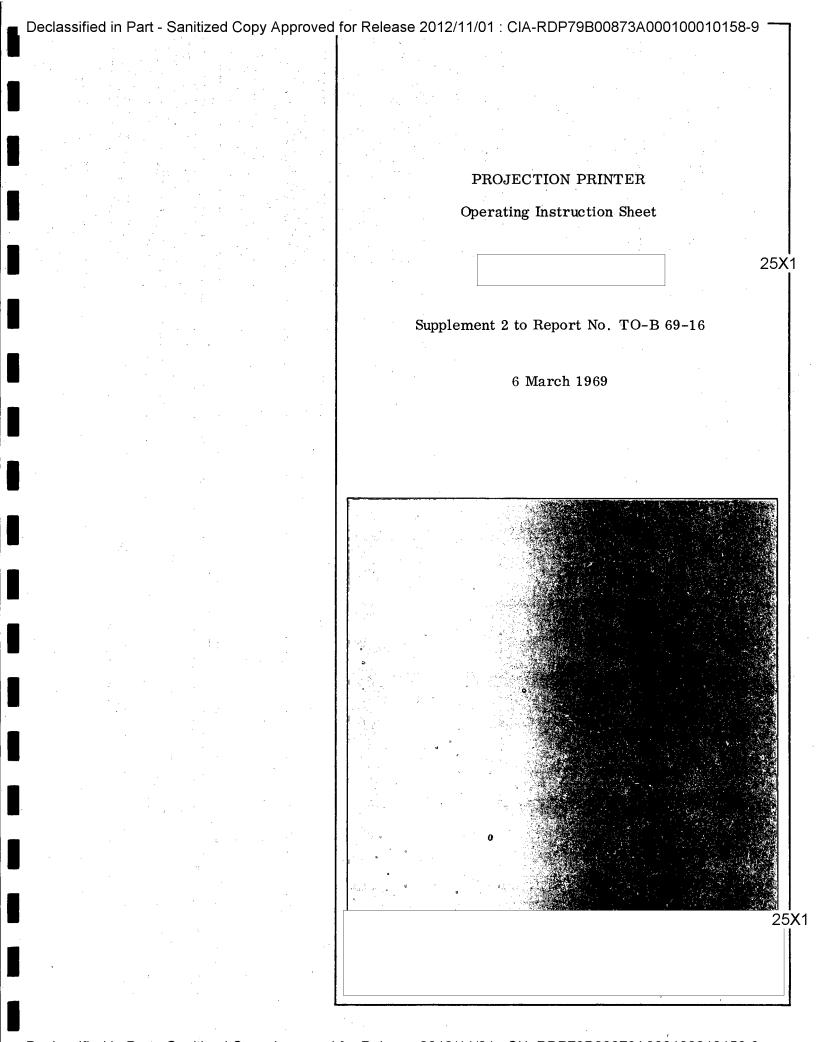


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INTRODUCTION

The Projection Printer unit is used as a projecting microscope for viewing a portion of a negative at a desired magnification ratio within the 28.5X to 575X range and as a photomicrograph exposure device when a hard copy from paper or film media is desired. The operation of the unit is straightforward as defined in the operating instructions herein; after the operator has become familiar with this unit, he may vary these instructions without changing the basic function of the unit. The step-by-step operating instructions are given below.

OPERATING PROCEDURE

PROJECTING MICROSCOPE

- 1. Prepare the Projection Printer for use by checking or performing the following: connect the power cord to the appropriate electrical power receptacle; rotate the mirror control lever located on top of the unit until the end points toward the 8 x 10 in. viewing screen; release the CALIBRATE control cable release plunger by pressing on the knurled-edge washer.
- 2. Place the POWER switch in the ON (up) position.
- 3. Choose the desired magnification ratio from Table 1.
- 4. Place the condenser, objective, and 10X to 20X controls in their respective positions corresponding to the magnification ratio desired. The condenser control is on the left-hand side of the unit; the objective is positioned by rotating the microscope nose piece; and the 10X to 20X control is a lever on the right-hand side of the unit just underneath the 4 x 5 in. viewing screen.
- 5. Push OPEN SHUTTER cable release plunger; it will remain in the depressed position until released by pressing on the knurled-edge washer.
- 6. Turn BRIGHTNESS control to maximum (clockwise).
- 7. Adjust coarse and fine focus controls until the specimen is focused.

Table 1. Lens Positions and Related Magnification Rati	Table 1.	Lens Po	sitions and	Related	Magnification	Ratio
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X Mag.	Condenser	Objective	Ocular 10-20X
28	6.3	2.5	10
65	6.3	6.3	10
61	6.3	2.5	20
106	10.0	10.0	10
145	6.3	6.3	20
230	10.0	10.0	20
270	20.0	25.0	10
575	20.0	25.0	, 20

- 8. Turn FIELD ADJUST control (behind condenser selector) until the area is evenly illuminated and flare is minimized as observed on the viewing screen.
- 9. Position the specimen by operating the x and y table movement controls until the desired portion of the specimen is shown on the viewing screen.

PHOTOMICROGRAPHS

- 1. Set up the Projection Printer for viewing the specimen by following the instructions for its use as a projection microscope.
- 2. Release the OPEN SHUTTER cable release plunger by pressing on the knurled-edge washer.
- 3. Push the CALIBRATE cable release plunger.
- 4. Observe the LAMP INTENSITY meter while rotating the LAMP BRIGHT-NESS control to set the desired lamp intensity for the hard copy media being used (lamp intensity for various film combinations should be listed for convenient reference).
- 5. Release the CALIBRATE cable release plunger by pressing on the knurled-edge washer.

6. Load an 8 x 10 film holder that contains the desired medium (film or paper) for hard copy into the 8 x 10 Graflok back by lifting the metal bar to the left of the viewing screen and carefully inserting the film holder. Similarly, a 4 x 5 Graflok back is located on the right-hand side of the unit and may be loaded with a 4 x 5 film holder or adapter; however, the mirror control lever on top of the unit must be rotated so that the end points toward the 4 x 5 viewing screen.

NOTE

Before exposing film or paper in the 8×10 holder, insert a 4×5 holder in the 4×5 Graflok back. Conversely, insert an 8×10 holder before exposing film or paper in the 4×5 holder.

- 7. Set the desired exposure time on the EXPOSURE control (see Table 2).
- 8. Remove the film holder dark slide and place it out of the way.
- 9. Expose the hard copy media by pressing the SHUTTER FIRE plunger. Since the exposure time and shutter operation are controlled by the timer mechanism, after pressing the plunger wait until the timer mechanism has opened and closed the shutter before toughing the Projection Printer or its mounting support.
- 10. Insert the dark slide in the film holder and remove the film holder from the Graflok back.
- 11. Process the hard copy by the appropriate method.
- 12. If additional copies are desired, repeat applicable steps of the instructions.
- 13. Turn the unit off by placing the POWER switch in the down position.

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Table 2. Typical Exposure Times

Type Film or Paper	Lamp Intensity Meter	Exposure <u>Time (secs)</u>
Agfa-Gavaert CO23	0.55	8
Agfa-Gavaert CO23	0.70	4
Polaroid Type 52	1.00	1/120

